

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of Performance Measurements and Standards for Unbundled Network Elements and Interconnection	CC Docket No. 01-318
In the Matter of Performance Measurements and Reporting Requirements For Operations Support Systems, Interconnection, and Operator Services and Directory Assistance	CC Docket No. 98-56
In the Matter of Deployment of Wireless Services Offering Advanced Telecommunications Capability	CC Docket No. 98-147
In the Matter of Petition of Association for Local Telecommunications Services for Declaratory Ruling	CC Docket No. 98-147, 98-141

Declaration

of

LEE L. SELWYN

and

SCOTT C. LUNDQUIST

on behalf of

Focal Communications Corporation
Pac-West Telecomm, Inc.
US LEC Corp.

January 21, 2002

DECLARATION OF LEE L. SELWYN AND SCOTT C. LUNDQUIST

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DECLARATION OF LEE L. SELWYN AND SCOTT C. LUNDQUIST

1 **Introduction and Summary**

2

3 Lee L. Selwyn, of lawful age, declares and says as follows:

4

5 1. My name is Lee L. Selwyn; I am President of Economics and Technology, Inc.
6 ("ETI"), Two Center Plaza, Suite 400, Boston, Massachusetts 02108. ETI is a research
7 and consulting firm specializing in telecommunications and public utility regulation and

1 public policy. My Statement of Qualifications is annexed hereto as Attachment 1 and is
2 made a part hereof.

3
4 2. I have been actively involved in the telecommunications field for more than
5 thirty-five years. I founded the firm of Economics and Technology, Inc. in 1972, and
6 have served as its President since that date. I have provided expert testimony on
7 numerous occasions before state public regulatory commissions concerning the
8 introduction of competition into former monopoly telecommunications markets, ILEC
9 market power, local network interconnection and unbundling, and service quality
10 performance. I have participated in numerous FCC proceedings dating back to 1967 on a
11 broad range of issues, including access charges, price cap regulation, interconnection and
12 unbundled network element (UNE) pricing, universal service, number resource
13 optimization, local competition, wireless services, ILEC mergers, and Section 271 BOC
14 in-region interLATA entry, on behalf of large corporate telecommunications users,
15 residential consumers, and competitive local exchange carriers.

16
17 Scott C. Lundquist, of lawful age, declares and says as follows:

18
19 3. My name is Scott C. Lundquist; I am a Vice President of Economics and
20 Technology, Inc., Two Center Plaza, Suite 400, Boston, Massachusetts 02108. My
21 Statement of Qualifications is annexed hereto as Attachment 2 and is made a part hereof.

1 4. I have been continuously engaged in the field of telecommunications regulation
2 for more than fifteen years. Since being named a Vice President of ETI in 1996, I have
3 analyzed and presented expert testimony concerning the economics of local competition
4 and network interconnection and unbundling before the state public utility commissions
5 of Alabama, California, Connecticut, Hawaii, Maryland, Nevada, New Jersey, Ohio, and
6 Washington state. Many of these cases have required that I analyze the economics of
7 local exchange carriers' ("LECs") networks and services, relative to such issues as the
8 restructuring of access service tariffs, the development of cost-based rates for unbundled
9 network rate elements ("UNEs"), and the arbitration of interconnection agreements.
10 Over the past twelve years, I have also contributed to numerous comments submitted in
11 FCC Common Carrier proceedings, on such topics as price cap regulation, access
12 charges, expanded interconnection, number portability, and wireless services.

13
14 5. We have been asked by a coalition of competitive local exchange carriers
15 ("CLECs"), consisting of Focal Communications Corp., Pac-West Telecomm, Inc., and
16 US LEC Corp. ("the CLEC Coalition") to respond to the Commission's request for
17 comment on several specific issues identified in its *Notice of Proposed Rulemaking*
18 ("NPRM") in CC Docket Nos. 01-318 *et al.*¹ concerning the possible implementation of
19 an enforcement mechanism for responding to any violations of a federal system of ILEC
20 wholesale service quality performance measures and standards that the Commission
21 might adopt. The Commission specifically seeks comment on the following issues: (1)

1. *In the matter of Performance Measurements and Standards for Unbundled Network Elements and Interconnection*, CC Docket No. 01-318 *et al* (FCC 01-331), released November 19, 2001 ("Wholesale Performance NPRM").

1 whether the Commission should establish “a self-effectuating liquidated damages rule
2 similar to those that have been adopted by several states;” (2) how such a system would
3 work, who would be eligible for such payments, and what would be the amount of the
4 payments; and (3) whether the Commission should adopt a standard creating a
5 presumption of competitive harm in violation of Section 271, or make a determination of
6 competitive harm on a case-by-case basis, if the incumbent LEC’s performance falls
7 below a certain level for a particular measurement or standard.² The CLEC Coalition
8 requested that we research and analyze how liquidated damages are structured and
9 applied in other industries, and to evaluate the feasibility of devising a liquidated
10 damages mechanism for such enforcement purposes. In addition, we were asked to
11 comment on the statistical methods that the Commission should apply to evaluate the
12 ILECs’ compliance with the wholesale performance quality standards that might be
13 prescribed by the Commission.

14
15 **Pre-defined mechanisms for determining liquidated damages in the event of a**
16 **failure to perform are widely used in other industries and commercial applications,**
17 **including the construction, natural gas, and electric power industries.**
18

19 6. In this Declaration, we present the results of our research into the use of pre-
20 defined and self-executing liquidated damages mechanisms in three industries — the
21 construction industry, the natural gas industry (relative to delivery of gas), and the
22 electric industry (relative to power purchase agreements and generator interconnection).
23 We found that liquidated damages mechanisms were commonly employed in all three

2. *Id.*, at para. 22.

1 industries. For example, in the construction industry, liquidated damages are typically
2 determined as a fixed sum to be paid for each calendar day of delay after the date
3 contracted for substantial completion of the given construction project or subparts
4 thereof. For long term electric power purchase agreements, liquidated damages are often
5 set as a percentage of the capacity payments to be paid for the given time period.
6 Liquidated damages payments generally are intended to compensate one party for
7 economic losses due to the other party's non-performance, and are not intended to be
8 punitive. They tend to be applied when it is to the mutual advantage of both buyer and
9 seller to determine in advance the financial consequences of a failure to perform, e.g.
10 when it is difficult and/or expensive to accurately quantify the economic damages
11 attributable to specific instances of non-performance or where the amounts involved
12 would not justify the costs and delays attendant to litigation. Based upon our research, it
13 appears reasonable and appropriate to devise a liquidated damages provision to
14 incorporate into any federal performance monitoring and standards regime applying to
15 the ILEC's supply of wholesale services and interconnection to CLECs.

16
17 7. Liquidated damages are defined in legal terms, as (for example) "A sum
18 stipulated and agreed upon by the parties, at the time of entering into a contract, as being
19 payable as compensation for loss suffered in the event of a breach."³ From an economic
20 standpoint and in the context of the transactions being addressed in this NPRM,
21 liquidated damages can be defined as payments to be made by a seller (the ILEC in this
22 case) to a buyer (the CLEC), upon non-performance by the seller, wherein the payments

3. Source: Ballentine's Law Dictionary, accessed via Lexis.com (1/15/02).

1 are intended to compensate the buyer for economic losses due to the seller's non-
2 performance, over and above the nominal value of the service and/or quality level that
3 failed to be adequately supplied. Consider the following example. A specialty women's
4 clothing retailer contracts with a high-end dress manufacturer to get a one month advance
5 shipment of the manufacturer's new spring line before any shipments are made to chain
6 and department stores, providing the specialty retailer with an opportunity to offer these
7 dresses ahead of its competitors. Based upon that agreement, the specialty store
8 undertakes an advertising and direct mail campaign promoting this "exclusive"
9 arrangement with the manufacturer. However, the manufacturer fails to ship the
10 merchandise on time, and by the time the shipment arrives the competitive benefit of the
11 "exclusive" arrangement is dissipated. The specialty store suffers substantial economic
12 losses in this situation, although the precise amount may be difficult to determine. Its
13 outlays for advertising and direct mail were wasted, because it ultimately had no
14 merchandise to sell. The delay in delivery also results in lost sales and profits, because
15 by the time the goods arrive competing retailers will also be selling the same items, perhaps
16 at lower prices. However, the precise amount of lost sales and profits may be difficult to
17 quantify, because at least some of the sales will be made anyway, once the goods arrive.
18 In addition to the *tangible* losses (wasted advertising expenses and lost profits), the store
19 may also suffer a more intangible loss in the form of damage to its reputation, having
20 advertised something that it then could not actually provide. Because the possibility for
21 such delay or non-performance is anticipated in advance and the potential economic
22 losses will be difficult to determine precisely, the parties can include in their agreement a
23 liquidated damages provision wherein the manufacturer will be required to pay a pre-

1 determined amount of compensation for the advertising costs and lost profits as a
2 consequence of its delay in shipping the merchandise.

3
4 8. Liquidated damages provisions tend to be applied when it is difficult to accurately
5 quantify the economic damages attributable to non-performance. By defining the
6 potential levels of damages payments at the outset, the risks of non-performance can be
7 taken into account by both parties and managed as a business risk; thus, the potentially
8 injured party has some assurance that it will receive reasonable compensation for future
9 damages, the potentially liable party gains some control and predictability relative to its
10 possible financial liability for non-performance, and both parties avoid the transaction
11 costs of quantifying actual damages incurred and any consequent litigation that might
12 arise.

13
14 9. Liquidated damages may be structured in a variety of ways, provided that they
15 meet the goal of providing compensation for the injured party's economic losses in the
16 event of a failure to perform. Two common methods are to specify a flat amount
17 assessed per each day that non-performance persists (e.g., due to a delay in completion of
18 a construction project), or to define payment amounts as a percentage of the capacity
19 payments for the relevant time period (e.g., when there is a failure to meet a minimum
20 capacity level for a natural gas delivery). Payments may be made directly to the injured
21 party once the applicable payment amount has been determined, or compensation can be
22 made via a hold-back of payments otherwise due from the buyer to the seller.
23 Illustrations of these mechanisms are described in more detail below.

1 ***Liquidated damage provisions in construction contracts***

2
3 10. We have researched the use of liquidated damages provisions in the construction
4 industry. We have found that liquidated damages provisions and similar pre-
5 determinations of the financial consequences of a failure to perform or of inadequate
6 performance (relative to the contract specification) are fairly common “terms and
7 conditions” in contracts for construction projects. Because many governmental agencies
8 routinely make or permit public disclosures of their contracts, most of the examples that
9 we have found of liquidated damages clauses in construction contracts were obtained
10 from government or other public sources, including municipal governments, state
11 procurement agencies, various federal executive agencies, and the US military.

12
13 11. *American Institute of Architects (AIA) guidelines.* The American Institute of
14 Architects (“AIA”) has developed and published standard contract forms as a service to
15 the construction industry. It has published a document that contains template contract
16 language for liquidated damages.⁴ The AIA contract form structures liquidated damages
17 as a fixed sum (unspecified in the template) to be paid for each calendar day of delay
18 after the date contracted for substantial completion of the given construction project.⁵
19 The AIA guideline observes that “liquidated damages are enforceable if the amount ... is

4. American Institute of Architects, Document No. A511-1998, Guide for
Supplementary Conditions – 1998 Edition. Source: <http://www.aia.org/documents/>,
accessed 1/3/02.

5. *Id.* at Section 9.11, Liquidated Damages.

1 a reasonable measure of the anticipated harm.”⁶ It also observes that “[a]n advantage of
2 liquidated damages is elimination of the cost entailed to prove the actual damages.”⁷

3
4 12. *Federal executive agencies.* The US federal government applies a standardized
5 acquisition regime, known as the Federal Acquisition Regulation (“FAR”), as the primary
6 means of carrying out acquisitions of services and supplies by all executive agencies
7 using appropriate funds.⁸ The FAR includes a standardized contract provision that is to
8 be used for all construction projects (FAR 52.211-12). In relevant part, it provide that
9 “[i]f the Contractor fails to complete the work within the time specified in the contract,
10 the Contractor shall pay liquidated damages to the Government in the amount of _____
11 [Contracting Officer insert amount] for each calendar day of delay until the work is
12 completed or accepted.”⁹ A comparable liquidated damages provision is applied to
13 federal agency contracts for supplies, services, or research and development under the
14 FAR 52.211-11.¹⁰ Both leave the specification of the daily liquidated damages amount to
15 the discretion of the contracting officer.

6. *Id.*

7. *Id.*

8. Source: Federal Acquisition Regulation
<http://farsite.hill.af.mil/reghtml/regs/far2afmcfars/fardfars/far/foreword.htm> (accessed
1/17/02).

9. Federal Acquisition Regulation 52.211-12. Source:
http://farsite.hill.af.mil/reghtml/regs/far2afmcfars/fardfars/far/52_000.htm#P901_129205
(accessed 1/7/02).

10. *Id.*

1 13. *Department of Defense.* Another federal procurement system, the Defense
2 Federal Acquisition Regulation Supplement (“DFARS”), applies to purchases and
3 contracts by the Department of Defense’s (“DoD’s”) contracting activities made in
4 support of foreign military sales or North Atlantic Treaty Organization cooperative
5 projects. DFARS subpart 211.5 applies the FAR requirement for liquidated damages
6 (FAR 52.211-12) on a mandatory basis to all construction contracts exceeding \$500,000,
7 except cost-plus-fixed-fee contracts or contracts where the contractor cannot control the
8 pace of the work.¹¹ Use of the clause in contracts of \$500,000 or less is optional under
9 DFARS.

10
11 14. *State procurement agencies.* Liquidated damages provisions are included in the
12 standard contract templates used by numerous state procurement agencies. A few
13 examples are described below.

14
15 15. The California Department of Transportation (“CalTrans”) is the California
16 agency that administers the contracts for public works construction and other services
17 supporting the state’s highways, bridges, and other public transportation infrastructure.
18 CalTrans publishes a detailed guide to the state’s requirements for contracts governing
19 that work, called the Plans, Specifications, and Estimates Guide (“PS&E Guide”).¹² The

11. Defense Federal Acquisition Regulation Supplement subpart 211.5 Liquidated Damages (revised October 1, 2001). Source: <http://farsite.hill.af.mil/VFDFAR1.HTM>

12. CalTrans Engineering Services, Division of Office Engineer, Plans, Specifications, and Estimates Guide (March 2001). Source: http://www.dot.ca.gov/hq/esc/oe/specifications/pse_guide/PS&E_Guide_3_27_01.doc, accessed January 21, 2002.

1 PS&E Guide calls for liquidated damages provisions to be included in CalTrans
2 construction contracts, based on the estimated cost of the field construction engineering.
3 The Guide gives a standard formula to calculate liquidated damages for specific
4 contracts, namely: $L\% \times \text{Total Estimate} / \text{Working Days}$, where L is a “Liquidated
5 Damages Factor” that varies depending upon the type of construction undertaken, from
6 3% (for road resurfacing work) to 9% (for new highway work), and Working Days is the
7 number of working days for which the project is overdue.¹³ It also notes that “in special
8 cases, liquidated damages greater than the estimated field construction engineering costs
9 may be specified provided detailed reasons are given to support the recommended rate.”¹⁴

10
11 16. The Alabama Building Commission oversees bidding and implementation of
12 construction contracts for the state of Alabama. The Building Commission employs
13 standard contracts that include provisions for liquidated damages. Its standard contract
14 for the Public School and College Authority (“PSCA”), Form No. 9-A, includes a

13. *Id.* at pages 4-11 and 4-12.

14. *Id.*, at page 4-11.

1 liquidated damages provision,¹⁵ as does its General Conditions for the non-PSCA
2 contract.¹⁶

3
4 17. The Kansas Department of Administration's contract template also includes a
5 liquidated damages provision. The general conditions in the agency's standard
6 construction contract provide for liquidated damages, structured as a payment per day of
7 delay caused by the construction company.¹⁷ In a margin note discussing the application
8 of liquidated damages, this document also states that "case law has held that liquidated
9 damages will not be enforceable if it is used as a penalty to secure performance; to have a
10 valid liquidated damages clause, the amount must be difficult to ascertain and be a
11 reasonable estimate of the damages the State will suffer if the project is not completed on
12 time."¹⁸

15. Alabama Building Commission Form No. 9A (Construction Contract), August 2001, at para. 12. Source: <http://www.bc.state.al.us/pubSchoolDoc.htm>, accessed 1/3/02.

16. Alabama Building Commission Form C-08, Article 49 (Liquidated Damages). Source: <http://www.bc.state.al.us/contContractDoc.htm>, accessed 1/3/02.

17. Kansas Dept. of Administration, Architectural Services, *Specifications Front End Data Form*, DOAS-1 (updated 8/4/2000), Article 48 (Liquidated Damages). Source: <http://da.state.ks.us/arch/files/frontend.pdf>, accessed 1/3/02.

18. *Id.* We offer this statement as evidence of how other government agencies have characterized their liquidated damages provisions, and not as a legal opinion.

1 ***Natural gas supply contracts***

2
3 18. Liquidated damages provisions appear frequently in contracts for the delivery of
4 natural gas supplies. They can be used to protect either the gas buyer or the supplier from
5 non-performance under the contract. Following are some illustrative examples.

6
7 19. The Mexican firm Energia Azteca X (“EAX”) entered into a fifteen-year contract
8 with Coral Energy Resources L.P. (“Coral Energy”) to purchase natural gas from Coral
9 Energy. The contract included a liquidated damages provision that specifies that, if Coral
10 Energy fails (for reasons other than force majeure) to deliver the minimum daily contract
11 quantity of gas to EAX, it must pay EAX liquidated damages of \$0.15 per million BTU
12 (MMBtu), plus compensate EAX for any additional costs it incurs in obtaining alternative
13 supplies of gas to the amount under delivery.¹⁹

14
15 20. Sierra Pacific Power Company entered into a three-year contract with Amoco
16 Canada Petroleum Company to purchase natural gas from Amoco. The contract included
17 a liquidated damages provision under which Sierra is required to take the entire daily
18 contract quantity (“DCQ”) of gas specified in the contract, or pay liquidated damages.²⁰

19
19. US Department of Energy, FE Docket No. 01-15-NG, *Order Granting Long-Term Authorization to Export Natural Gas to Mexico*, DOE/FE Order No. 1678 (May 7, 2001), at 1-2.

20. See DOE/FE Docket No. 97-81-NG, *Order Granting Long-Term Authorization to Import Natural Gas from Canada*, DOE/FE Order No. 1327 (November 5, 1997), at 1.

21. The State of Florida entered into a five-year contract with Enron Capital and Trade Resources Group (“Enron”), under which Enron would supply natural gas to various state agencies. The agreement calls for Enron to receive liquidated damages from the State whenever the State declines to accept delivery of a pre-determined minimum daily quantity of gas under a certain fixed price (the “Fixed Price Quantity”).²¹ The agreement characterizes those liquidated damages payments as intended “to cover Contractor’s administrative and operational costs and expenses.”

Electric power industry

22. Contracts for the delivery of electric power from generation facilities also contain liquidated damages provisions. One industry analyst has noted that, for long term power purchase agreements, “[c]ommonly, liquidated damages are set as a percentage of the capacity payments paid for the period involved.”²² As described below, liquidated damages also are being applied in contracts governing interconnection of generation plants and power grids, and are being considered in that capacity by the FERC.

23. For example, Eagle Point, an electric generation company, and Public Service Electric and Gas Company (“PSE&G”) have entered into a Power Purchase and

21. Natural Gas Purchase Contract (revised November 1, 1998), State of Florida and Enron Capital and Trade Resources Group. Source: http://fcn.state.fl.us/st_contracts/405215951/contractbody.htm, accessed 12/28/01.

22. Energy Notes: New Power Industry Trend — Contracting for the Services of a Generating Plant (January 22, 2001), by Lee M. Goodwin, Infrastructure Development and Finance Practice Group, Thelen Reid & Priest LLP.

1 Interconnection Agreement (“PPA”), under which Eagle Point agreed to sell power to
2 PSE&G from Eagle Point’s plant in New Jersey. The Amended PPA includes liquidated
3 damages provisions that both parties assert would fully compensate PSE&G if Eagle
4 Point failed to meet its contractual delivery obligations.²³

5
6 24. There are ten regional Electric Reliability Councils in North America that
7 administer the regional electric power grids. The Texas council, known as the Electric
8 Reliability Council of Texas, Inc. (“ERCOT”), has published standardized templates for
9 the agreements governing interconnection between an electric generation plant and a
10 transmission/distribution system in its region.²⁴ The ERCOT template includes an
11 optional liquidated damages provision, which provides (in relevant part) that “[t]he
12 Parties agree that actual damages to the Generator, in the event the TIF [interconnection
13 facilities] are not completed by the In-Service Date, may include Generator’s fixed
14 operation and maintenance costs and lost opportunity costs. Such actual damages are
15 uncertain and impossible to determine at this time. The Parties agree that, because of
16 such uncertainty, any liquidated damages paid by the TSP to the Generator shall be an

23. New Jersey BPU, *In the matter of Application of Eagle Point Cogeneration Partnership (“Eagle Point”) and Public Service Electric and Gas Company (“PSE&G”) for the Approval of an Amendment and Restatement of the Power Purchase and Interconnection Agreement Currently Existing Between Eagle Point and PSE&G*, Docket EM01080489, *Decision and Order*, November 8, 2001, at 3.

24. Electric Reliability Councils Of Texas, Standard Generation Interconnection Agreement. Source: http://www.ferc.fed.us/electric/gen_inter/ercot_stand.pdf, accessed 1/4/02.

1 amount equal to $\frac{1}{2}$ of 1% of the actual cost of the TIF, per day. However, in no event
2 shall the total liquidated damages exceed 20% of the actual cost of the TIF.”²⁵

3
4 25. The Federal Energy Regulatory Commission (“FERC”) has opened a Rulemaking
5 RM02-1 that seeks to adopt a standard agreement for generator interconnection
6 applicable to all public utilities that have electric transmission facilities subject to the
7 Federal Power Act.²⁶ FERC has proposed use of the Texas ERCOT template, including
8 its liquidated damages provisions, as a model for that effort. FERC originally set a
9 December deadline for submission of comments on that proposal, but subsequently has
10 extended that deadline to January 25, 2002.

11
12 *Application of liquidated damages contingencies to ILECs’ supply of wholesale*
13 *services and interconnection to CLECs.*
14

15 26. The practices extant both in regulated and nonregulated industries with respect to
16 the use of liquidated damages provisions confirms that it is entirely reasonable and
17 appropriate to devise a liquidated damages provision to incorporate into any FCC
18 performance monitoring and standards regime applying to the ILECs’ supply of
19 wholesale services and interconnection to CLECs. In fact (as the NPRM recognizes),
20 several states have already adopted liquidated damages mechanisms.

25. *Id.*, at Article 4, subsection 4.1.B(ii).

26. See FERC, *In the matter of Standardizing Generator Interconnection Agreement and Procedures*, Docket No. RM02-1, *Advance Notice of Proposed Rulemaking* (October 25, 2001).

1 27. There are, however, several critical distinctions that need to be drawn as between
2 the examples from the other industries that we have cited and discussed above and the
3 situation applicable to ILEC/CLEC transactions with respect to UNEs and
4 interconnection arrangements. First, for the most part none of the various transactions
5 that we have discussed for illustrative purposes involve a monopoly supplier of the
6 subject commodity or service. While the buyer in each case would clearly suffer
7 economic harm due to the seller's failure to deliver or to complete the work on schedule,
8 the loss would generally be confined to the specific transaction; ultimately, if the buyer
9 were to conclude that there is a systemic problem with the seller's ability to perform, on
10 subsequent purchases the buyer is free to "vote with his feet" and take his business
11 elsewhere. This is, of course, not possible in the case of CLEC purchases of essential
12 facilities from ILECs that are, *by definition*, within the monopoly control of the ILEC.
13 Persistent failures on the part of the ILEC do not leave the CLEC with the option to shop
14 around for alternatives, but what these failure may accomplish is to put the CLEC out of
15 business altogether. Second, the various examples of the use of liquidated damages
16 provisions that we have been discussing typically apply to specific, individual
17 transactions – the failure of the seller to deliver on time, to complete a specific
18 construction project on time, or to comply with contract specifications. In the case of
19 ILEC/CLEC transactions, the approach taken by the states and proposed by the
20 Commission is that ILEC performance is to be assessed not with respect to *individual*
21 transactions, but rather across all transactions completed during a given period of time.²⁷

27. See, e.g., the Texas and California mechanisms discussed in para. 33 of this Declaration; also, see para. 22 of the *Wholesale Performance NPRM*.

1 Thus, a failure to perform would not necessarily be defined in terms of a delay in
2 providing a specific UNE or interconnection arrangement, but rather with respect to
3 substandard performance across the totality of transactions, such as exceeding a specified
4 percentage of orders not completed within a certain number of days.

5
6 28. The potential economic harm to a CLEC resulting from the ILEC's failure to
7 satisfy the required performance standards arises in a number of ways, ranging from lost
8 profits from its provision of its service to the customer for the period of the delay, to the
9 cancellation of the order by the customer in the event of a protracted delay, and on up
10 through permanent damage to the CLEC's reputation if it is consistently unable to timely
11 provide service at retail due to the failure on the part of the ILEC to meet the ILEC's
12 performance requirements. Each and all of these potential sources of loss can and should
13 be captured in FCC-mandated liquidated damages provisions. Accordingly, the federal
14 liquidated damages mechanism should be structured according to the following
15 principles.

16
17 29. *Economic basis for setting liquidated damages amounts.* Liquidated damages
18 payments need to be rationally related to the economic losses likely to be borne by
19 CLECs as a result of non-performance. As we have noted and as we explore in more
20 detail below, there are several types of economic losses that can occur.

21
22 30. *CLEC's loss of end user revenue due to ILEC's non-performance.* This
23 encompasses both delay in provisioning a wholesale circuit, or circuit troubles that

1 prevent it from being put into service. These losses can be easily quantified based upon
2 the market price for the retail circuit; a generic rule could use the ILEC's comparable
3 retail recurring rate as a proxy for the market price (pro-rated to a daily amount), times
4 the number of days' delay.

5
6 31. *CLEC's loss of the end user account due to ILEC non-performance.* A protracted
7 delay in ILEC provisioning of a working wholesale circuit could cause the end user to
8 cancel his circuit order and migrate from the CLEC to another service provider (and
9 possibly to the ILEC itself). The losses in this case can be quantified as the number of
10 circuits cancelled, times the expected duration of the customer's service (estimated from
11 an average contract length or average customer churn rate, for example).

12
13 32. *CLEC's loss of future business due to ILEC non-performance.* Repeated failures
14 to perform by the ILEC could harm the CLEC's reputation in the marketplace and
15 thereby reduce its market share. The potential economic losses that may be borne by
16 particular CLECs could vary widely depending upon their individual circumstances, i.e.,
17 market areas, business plan, potential for growth, etc. This determination might need to
18 be made on a case-by-case basis, and may be difficult to incorporate into pre-specified
19 liquidated damages amounts. One method for recognizing this potential that could be
20 factored into a standard liquidated damages provision is the use of *escalation* of damages
21 in the event of repeated and persistent failures on the part of the ILEC to meet established
22 performance goals.

1 33. *Escalation of liquidated damages amounts.* This loss hierarchy can be reflected
2 in a liquidated damages regime by having payments escalate as the duration and/or
3 severity of non-performance increases. Several states have taken this approach. For
4 example, the Public Utility Commission of Texas (“Texas PUC”) has adopted a
5 Performance Remedy Plan as part of the Southwestern Bell Telephone Company
6 (“SWBT”) generic interconnection agreement (known as “T2A”). The Performance
7 Remedy Plan sets forth a comprehensive set of quality standards for SWBT’s wholesale
8 services, and includes specific liquidated damages amounts that escalate over time when
9 non-performance fails to be corrected. For example, under the High threshold (which
10 applies to certain most-critical measures, such as Average Installation Interval), from
11 Month 1 to Month 6 of non-performance, liquidated damages rise from \$150 to \$800 per
12 occurrence.²⁸ The California Public Utilities Commission (“CPUC”) is in the process of
13 devising a comprehensive service quality plan for wholesale services as well. Similar to
14 the Texas plan, the proposed California Performance Incentive Plan (set forth in a Draft
15 Decision issued November 21, 2001) would escalate payments as non-performance
16 continued for durations of Ordinary, Chronic, to Extended length.²⁹ We recommend that
17 the Commission adopt a similar escalation approach, in which liquidated damages

28. Texas T2A generic interconnection agreement (T2A), Revised 01/31/00, Attachment 17: Performance Remedy Plan, at page 10. Source: <http://clec.sbc.com/unrestr/interconnect/t2a/t2a.cfm> (accessed 1/8/02).

29. California Public Utilities Commission, *In the Matter of Order Instituting Rulemaking on the Commission’s Own Motion into Monitoring Performance of Operations Support Systems*, R.97-10-016; *In the Matter of Order Instituting Investigation on the Commission’s Own Motion into Monitoring Performance of Operations Support Systems*, I.97-10-17, *Draft Decision of ALJ Reed – Opinion on the Performance Incentives Plan*, November 21, 2001, Appendix B.

1 payments would rise upon continuation of a pattern of ILEC non-performance as opposed
2 to individual, isolated instances of non-performance.

3
4 34. We note that even with escalation provisions, it may be difficult for liquidated
5 damages payments to reach a level that would incent the ILEC to correct its sub-standard
6 performance, particularly if ILEC management believed that there would be no further
7 regulatory or antitrust enforcement actions taken to remedy the problem. When faced
8 with an escalating liquidated damages mechanism, ILEC management will confront a
9 fairly complex economic tradeoff, with at least the following elements. On the one hand,
10 if it takes no action to correct the problem causing the escalation, the ILEC will incur
11 costs in the form of the liquidated damages payments, plus (possibly) a loss of revenues
12 from the wholesale units that it no longer sells or for which it cannot bill (due to non-
13 performance). On the other hand, if the dissatisfied CLEC customer cancels the order
14 with the CLEC and instead takes the retail service from the ILEC, not only would the loss
15 of revenue be eliminated, the ILEC would have actually *profited* by virtue of its failure to
16 fulfill the wholesale service order from the CLEC. Further, the ILEC may also believe
17 that the anticompetitive consequences of its non-performance will drive the CLEC out of
18 the market and/or impede the CLEC's ability to grow, so that the ILEC may benefit not
19 just with respect to the specific transaction, but with respect to its long-term ability to
20 retain market share.

21
22 35. This last point also highlights yet another critical difference between the case of
23 ILEC/CLEC wholesale service transactions and those that exist under competitive market

1 conditions. In the latter case, the parties to the transaction do business with one another
2 *voluntarily* and with the expectation of mutual benefit: The buyer wants to buy, and the
3 seller wants to sell. While problems will periodically arise that result in the effectuation
4 of the liquidated damages provision, the parties embark upon the transaction with the
5 expectation that both will utilize their best efforts to assure that the deal is successfully
6 completed. By contrast, ILECs have strong business incentives to extend the *bare*
7 *minimum level of effort* necessary to “satisfy” regulatory standards, and no more. But for
8 a requirement to compensate the CLEC for its losses, the ILEC’s potential losses from its
9 failure to satisfactorily fulfill a wholesale service order are *de minimis* and may actually
10 result in *net gains to the ILEC* if the CLEC’s dissatisfied customer comes back to the
11 ILEC or if the CLEC’s ability to compete in the market is permanently damaged by the
12 ILEC’s failures. It is precisely for this reason that the Commission can *and must* adopt
13 and enforce substantial financial penalties imposed upon the ILEC for persistent failure to
14 meet performance standards; *separate and apart from such penalties, however, the FCC*
15 *should also adopt measures to assure that the CLEC may be made whole as a result of*
16 *ILEC failures, both with respect to the immediate loss of profits due to a delay on up*
17 *through the permanent and potentially irreparable damage to the CLEC’s business*
18 *arising from protracted ILEC shortcomings in meeting the CLEC’s wholesale service*
19 *requirements.*

20

1 **When evaluating ILECs' wholesale service quality performance statistics relative to**
2 **adopted standards, the Commission should balance the probabilities of Type 1 and**
3 **Type 2 errors so as to recognize the disproportionate harm that non-performance**
4 **can place on CLECs.**
5

6 36. At paras. 89-91 of the NPRM, the Commission observes that:

7
8 [t]he application of statistical analysis to performance measurement data can be
9 useful in determining whether an incumbent LEC is meeting the statutory
10 requirements with respect to its provision of services and network elements to
11 competitive LECs. Statistical analysis can help reveal the likelihood that reported
12 differences in an incumbent LEC's performance toward its retail customers and
13 competitive carriers are due to underlying differences in behavior rather than
14 random chance.³⁰
15

16 The Commission "seek[s] comment on which statistical tests should be performed to
17 determine whether observed differences in performance measurements between an
18 incumbent LEC's own retail customers and competing carriers reflect significant
19 differences in actual performance." In considering the statistical methods and tests that
20 are to be utilized in evaluating ILEC performance in providing wholesale services to
21 CLECs, it is essential that the Commission recognize the conflicting interests and goals
22 of each group. With respect to such tests, ILECs are primarily concerned with being
23 required to pay liquidated damages or non-performance penalties when in fact the
24 treatment they are providing CLECs is at parity. CLECs, on the other hand, may be
25 confronted with a possibly fatal loss of business as a result of inferior treatment by the
26 ILEC. Put in this perspective, any imposition of a liquidated damages liability upon an
27 ILEC that might arise due to incorrect statistical inference will have a barely perceptible

30. *Wholesale Performance NPRM*, at para. 89, footnote omitted.

1 impact upon the ILEC's financial results; by contrast, the same type of incorrect
2 statistical inference made in the opposite direction, i.e., concluding that the ILEC's
3 treatment of CLEC wholesale orders is at parity when in reality it is inferior, could so
4 severely damage a CLEC's business that its very survival might be threatened. The goal
5 of this proceeding and of the *Telecommunications Act* generally is to assure competitors
6 "a fair opportunity to compete." Hence, the balance of interests may well require that
7 particular attention be paid to minimizing the potential for incorrect statistical inferences
8 that mis-portray unsatisfactory ILEC performance as meeting the Commission's
9 standards.

10
11 37. In order to evaluate whether an ILEC has met its wholesale service quality
12 standards (assuming the Commission adopts such standards), the Commission will need
13 to examine statistics concerning the ILEC's wholesale performance, and thus the *NPRM*
14 also seeks comment on the statistical methodologies that should be applied to evaluate
15 that data.³¹ In general, the ILECs will periodically report to the Commission on the
16 results of statistical tests performed on data derived from their performance measurement
17 regimes or "Performance Indicator Definitions" (PIDs). The ILECs will seek to
18 demonstrate that there are no statistically significant differences in the manner in which
19 those facilities and services are provided to competitors vs. the manner in which the
20 ILEC itself (or its affiliates) gains access to the same or comparable resources. A central
21 issue arising in this context is the need to achieve a proper balance between "Type 1" and

31. *Id.*, at paras. 90-91.

1 "Type 2" sampling errors that may arise with respect to the statistical analysis of the
2 performance data.

3
4 38. Statistical testing involves the use of samples drawn from an overall population of
5 data. Whether the sample is obtained by drawing a random subset of all observations or,
6 alternatively, by looking at all events during a specified period of time (or some
7 combination of the two), the statistical problem of *sampling error* arises. Sampling error
8 causes the quantitative results of the sample to differ from those of the entire population
9 (the actual condition) simply because the specific observations that happen to have been
10 drawn have a certain probability of being unrepresentative of the overall population.
11 When two samples (e.g., ILEC fulfillment of CLEC orders and ILEC fulfillment of ILEC
12 retail or affiliate orders) are compared and found to differ in their results, that apparent
13 difference may be due to actual differences between the two populations from which the
14 samples were drawn, or may simply be due to sampling error, i.e., the specific samples
15 that were taken had exhibited properties that were not representative of the populations
16 from which they were drawn.

17
18 39. Statistical testing seeks to identify the effects of sampling errors and to assign
19 probabilities as to the accuracy of any conclusions that may be based thereon. For
20 example, suppose that two samples of the time to repair a circuit (from the time that a
21 trouble report is received until the problem is resolved) are drawn, one from the
22 population of ILEC retail customers and another from the population of CLEC customers
23 of the ILEC. Suppose that the ILEC sample indicates the average time to repair is 3.2

1 days, while the CLEC sample indicates that this value is 3.4 days. The question then
2 arises as to whether the seemingly inferior treatment being afforded to CLEC customers
3 is real or is instead due to sampling error — i.e., the particular observations that were
4 drawn from each population happened to exhibit these properties, even though the
5 populations themselves are actually afforded equal (parity) treatment.

6
7 40. One cannot, of course, ever be absolutely certain as to whether the perceived
8 difference is real or simply due to sampling error. Statistical tests are utilized to assign
9 probabilities to these two possibilities, allowing for one or the other to be accepted with a
10 given level of confidence (e.g., one might be 95% "confident" that the two populations
11 are statistically the same). The determination as to the likelihood that the difference in
12 the sample results is due to sampling error is accomplished by an examination of the
13 variability of the data and the calculation of various statistical measures. Generally, the
14 more variable the data, all else being equal, the more likely it is that the result is due to
15 sampling error than to actual population conditions.

16
17 41. The result of such statistical testing is generally expressed in the form of a
18 confidence interval around the sample results, allowing one to conclude that "there is a
19 probability of X% that the actual mean of the population (population mean) falls within
20 the range of plus or minus such-and-such around the sample mean." The test is
21 performed by examining the null hypothesis under which it is assumed that there is no
22 difference between the actual means for the two populations and that the apparent
23 difference is due to sampling error. So in the example above, while the sample mean for

1 the CLEC sample is 3.4 days, a 95% confidence level might determine that there is a 95%
2 probability that the actual population mean is between 3.1 and 3.7 days, i.e., the 3.4 day
3 sample mean plus or minus 0.3 days. Since in this example the ILEC sample mean of 3.2
4 days falls within that 95% confidence limit for the CLEC sample, one would be
5 compelled to conclude that at a 95% confidence level the two samples are at parity with
6 one another, i.e., that they are statistically the same with a probability of 95%.
7 Conversely, the same confidence test would indicate that there is a 5% probability that
8 the actual CLEC population mean falls outside the 3.1 day to 3.7 day interval, indicating
9 that the two populations are not at parity when the results based upon the sample would
10 suggest otherwise. This latter case of a "false negative" conclusion is known as a Type 1
11 error; the probability of making a Type 1 error is, in this example, 5%. Thus, there is a
12 5% chance that the ILEC and CLEC results are not at parity even when the sample results
13 indicate that they are.

14
15 42. There is, of course, nothing sacred about the choice of 95% as the confidence
16 level. The lower the confidence level, the narrower the confidence interval. Continuing
17 with our example, suppose that at an 85% confidence level the confidence interval is
18 between 3.3 and 3.5 days for the CLEC results. That is, there is an 85% chance that the
19 actual CLEC result is between 3.3 and 3.5 days. Since the ILEC result in this case was
20 3.2 days, one would then conclude, with an 85% level of confidence in that conclusion,
21 that the two populations are not at parity, and that CLECs are receiving inferior
22 treatment. If in fact the actual results are at parity, a Type 1 error will have occurred.
23 The probability of a Type 1 error in this case is 15% (i.e., 100% – 85%).

1 43. In our example, where in reality the two populations (ILEC customers and CLEC
2 customers) are at parity but, as a result of sampling error, the sample means are
3 sufficiently far apart that they fall outside of the confidence limit, one would then falsely
4 conclude that CLECs are receiving inferior service when in reality they are not. If the
5 ILEC would be subject to a financial penalty or liquidated damages obligation for being
6 out of parity with respect to its CLEC customers, the possibility of a Type 1 error at a
7 95% percent level of confidence would mean that there is a 5% chance that the ILEC
8 would be required to pay a penalty or liquidated damages when in fact it actually was in
9 compliance with the parity requirement. If a penalty or liquidated damages payment is
10 imposed for failing to achieve parity, then the ILEC would be forced to pay a penalty
11 based upon the sample results when in reality no penalty should have applied. Using a
12 95% confidence level as in our example, there is a 95% probability that the conclusion
13 based upon sample results (parity) will be correct, and conversely, a 5% probability that
14 the conclusion based upon sample results, i.e., that the ILEC and CLEC results are at
15 parity, will be wrong. The probability of reaching the correct conclusion (i.e., that the
16 two populations are at parity when they are in fact at parity) based upon the sample
17 results is referred to as α (alpha), while the probability of reaching the incorrect
18 conclusion (i.e., that the two populations are not at parity when in fact they are — a Type
19 1 error) is $1-\alpha$.

20
21 44. Suppose that, in reality, the two populations are not at parity, and that CLECs are
22 receiving inferior treatment from the ILEC relative to that which the ILEC provides to its
23 own retail customers. In that case, one would like to conclude that the two samples are

1 also out of parity, and this conclusion will in fact be reached if the sample means are
2 sufficiently far apart that they exceed the width of the confidence interval. The proba-
3 bility of reaching the correct result in this case is referred to as β (beta), while the pro-
4 bability of reaching an incorrect result is $1-\beta$. An incorrect result of this type is known as
5 a "Type 2" error, and the probability of reaching this false conclusion ($1-\beta$) is a function
6 of the sample size, nature of the distribution (normal vs. skewed), variance, and α .

7
8 45. Where in the case of Type 1 errors one is concerned with wrongly imposing a
9 financial penalty or a payment of liquidated damages on the ILEC, when a Type 2 error
10 occurs the CLEC is actually receiving inferior treatment but that fact is not detected. The
11 policy issue confronting the Commission is how to balance the interests of ILECs and
12 CLECs with respect to the likelihood of Type 1 vs. Type 2 errors, and how best to
13 achieve the fair opportunity to compete goal of the *Telecommunications Act*. There is, in
14 fact, an inverse relationship between α and β . The lower the probability of a Type 1 error
15 ($1-\alpha$), the higher the probability of a Type 2 error ($1-\beta$). The decision as to the
16 appropriate confidence level needed to balance these two outcomes must be made in the
17 context of the goals of the statistical measurement process itself.

18
19 46. In the instant situation, if a Type 1 error occurs (ILEC treatment of CLECs is
20 actually at parity, but is found to be inferior based upon the sample results), the ILEC will
21 be subject to a monetary penalty or liquidated damages liability. If the actual condition is
22 that the CLECs are receiving inferior treatment, but the sample results suggest parity,
23 then the CLEC will suffer an undetected problem that could result in a loss of business

1 or, if it persists, putting the CLEC out of business, and the ILEC will have avoided a
2 penalty that it should have paid. Indeed, if the probability of a Type 2 error is sufficiently
3 high, the ILEC's incentive to comply with the parity treatment requirement could be
4 seriously diminished. Since the consequences of a Type 1 error to the ILEC are
5 inappropriate penalties or liquidated damages payments, while the consequences of Type
6 2 errors to CLECs are undetected barriers to competition, one needs to assess the relative
7 importance, from a policy perspective, of these two outcomes.

8
9 47. ILECs are primarily concerned with being required to pay liquidated damages or
10 non-performance penalties when in fact the treatment they are providing CLECs is at
11 parity. Hence, an ILEC's objective in this proceeding would be to maximize and in so
12 doing minimize the probability of Type 1 errors. CLECs, on the other hand, may be
13 confronted with a possibly fatal loss of business as a result of inferior treatment by the
14 ILEC, and are thus understandably concerned about the potentially higher probability of a
15 Type 2 error. The selection of an appropriate α will necessarily be influenced by the
16 relative magnitude of the penalty that will be imposed upon ILECs for their failure to
17 achieve parity in treatment. If the ILEC payouts triggered by non-performance are high,
18 then the need to avoid Type 1 errors is greater than if, for example, the payout is little
19 more than a slap on the wrist, from the standpoint of the ILEC. That having been said, it
20 is also unimaginable that any payment that might ultimately be imposed upon ILECs for
21 their failure to achieve parity in treatment of CLECs will materially impact their earnings
22 or business viability. On the other hand, persistent undetected inferior treatment of
23 CLECs could well be fatal for a CLEC, and would almost assuredly have a consequential

1 impact upon such companies' earnings and business viability. Given that the goal of this
2 proceeding and of the *Telecommunications Act* generally is to assure competitors "a fair
3 opportunity to compete," the balance of interests may well require that far more attention
4 be paid to minimizing the potential for Type 2 errors than for Type 1 errors.

5
6 **Conclusions and recommendations**
7

8 48. Liquidated damages provisions are commonly used in a variety of industries to
9 appropriately assign the consequences of non- or inadequate performance under a
10 contract and provide for reasonable compensation of economic losses borne by the
11 injured party. In the case of most transactions initiated under competitive market
12 conditions, the parties do business with one another *voluntarily* and with the expectation
13 of mutual benefit: The buyer wants to buy and the seller wants to sell, and both embark
14 upon the transaction with the expectation that each will utilize its best efforts to assure
15 that the deal is successfully completed. This is distinctly not the case where ILECs
16 provide wholesale services, UNEs and interconnections to CLECs, in that such
17 transactions are distinctly *not voluntary* but are instead *required* by the 1996 *Act* and by
18 the Commission's rules. Indeed, the ILEC confronts a clear conflict of interest with
19 respect to such transactions, because by providing essential facilities and services to
20 CLECs, the ILEC is enhancing its rivals' opportunities and abilities to compete. ILECs
21 thus have strong business incentives to extend no more than the *bare minimum level of*
22 *effort* necessary to "satisfy" regulatory standards. It is precisely for this reason that the

1 Commission adopt and enforce substantial financial penalties imposed upon the ILEC for
2 persistent failure to meet performance standards; *separate and apart from such penalties,*
3 *however, the FCC should also adopt measures to assure that the CLEC may be made*
4 *whole as a result of ILEC failures, both with respect to the immediate loss of profits due*
5 *to a delay on up through the permanent and potentially irreparable damage to the*
6 *CLEC's business arising from protracted ILEC shortcomings in meeting the CLEC's*
7 *wholesale service requirements.*

8
9 A comparable liquidated damages mechanism should be devised by the Commission
10 for application to the wholesale services that ILECs provide to CLECs. The preferred
11 mechanism would incorporate an escalation device, so that liquidated damages
12 compensation corresponds to the likely economic losses borne by the CLEC(s) affected.
13 In addition, the Commission's statistical evaluation of the ILECs' wholesale service
14 quality performance should focus upon the minimization of Type 2 errors, i.e., false
15 positive findings of satisfactory performance, in light of the disproportionate adverse
16 impact that substandard performance will have upon CLECs' ability to offer competitive
17 services.

Attachment 1
Statement of Qualifications
Lee L. Selwyn

LEE L. SELWYN

Dr. Lee L. Selwyn has been actively involved in the telecommunications field for more than twenty-five years, and is an internationally recognized authority on telecommunications regulation, economics and public policy. Dr. Selwyn founded the firm of Economics and Technology, Inc. in 1972, and has served as its President since that date. He received his Ph.D. degree from the Alfred P. Sloan School of Management at the Massachusetts Institute of Technology. He also holds a Master of Science degree in Industrial Management from MIT and a Bachelor of Arts degree with honors in Economics from Queens College of the City University of New York.

Dr. Selwyn has testified as an expert on rate design, service cost analysis, form of regulation, and other telecommunications policy issues in telecommunications regulatory proceedings before some forty state commissions, the Federal Communications Commission and the Canadian Radio-television and Telecommunications Commission, among others. He has appeared as a witness on behalf of commercial organizations, non-profit institutions, as well as local, state and federal government authorities responsible for telecommunications regulation and consumer advocacy.

He has served or is now serving as a consultant to numerous state utilities commissions including those in Arizona, Minnesota, Kansas, Kentucky, the District of Columbia, Connecticut, California, Delaware, Maine, Massachusetts, New Hampshire, Vermont, New Mexico, Wisconsin and Washington State, the Office of Telecommunications Policy (Executive Office of the President), the National Telecommunications and Information Administration, the Federal Communications Commission, the Canadian Radio-television and Telecommunications Commission, the United Kingdom Office of Telecommunications, and the Secretaria de Comunicaciones y Transportes of the Republic of Mexico. He has also served as an advisor on telecommunications regulatory matters to the International Communications Association and the Ad Hoc Telecommunications Users Committee, as well as to a number of major corporate telecommunications users, information services providers, paging and cellular carriers, and specialized access services carriers.

Dr. Selwyn has presented testimony as an invited witness before the U.S. House of Representatives Subcommittee on Telecommunications, Consumer Protection and Finance and before the U.S. Senate Judiciary Committee, on subjects dealing with restructuring and deregulation of portions of the telecommunications industry.

In 1970, he was awarded a Post-Doctoral Research Grant in Public Utility Economics under a program sponsored by the American Telephone and Telegraph Company, to conduct research on the economic effects of telephone rate structures upon the computer time sharing industry. This work was conducted at Harvard University's Program on Technology and Society, where he was appointed as a Research Associate. Dr. Selwyn was also a member of the faculty at the College of Business Administration at Boston University from 1968 until 1973, where he taught courses in economics, finance and management information systems.

Curriculum Vitae of Lee L. Selwyn

Dr. Selwyn has published numerous papers and articles in professional and trade journals on the subject of telecommunications service regulation, cost methodology, rate design and pricing policy.

These have included:

“Taxes, Corporate Financial Policy and Return to Investors”
National Tax Journal, Vol. XX, No.4, December 1967.

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Broken Promises: A Review of Bell Atlantic-Pennsylvania's Performance Under Chapter 30, Lee L. Selwyn, Sonia N. Jorge and Patricia D. Kravtin, Economics and Technology, Inc., June 1998.

Building A Broadband America: The Competitive Keys to the Future of the Internet, Lee L. Selwyn, Patricia D. Kravtin and Scott A. Coleman, a report prepared for the Competitive Broadband Coalition, May 1999.

Bringing Broadband to Rural America: Investment and Innovation In the Wake of the Telecom Act, Lee L. Selwyn, Scott C. Lundquist and Scott A. Coleman, a report prepared for the Competitive Broadband Coalition, September 1999.

Dr. Selwyn has been an invited speaker at numerous seminars and conferences on telecommunications regulation and policy, including meetings and workshops sponsored by the National Telecommunications and Information Administration, the National Association of Regulatory Utility Commissioners, the U.S. General Services Administration, the Institute of Public Utilities at Michigan State University, the National Regulatory Research Institute at Ohio State University, the Harvard University Program on Information Resources Policy, the Columbia University Institute for Tele-Information, the International Communications Association, the Tele-Communications Association, the Western Conference of Public Service Commissioners, at the New England, Mid-America, Southern and Western regional PUC/PSC conferences, as well as at numerous conferences and workshops sponsored by individual regulatory

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agencies.

Attachment 2
Statement of Qualifications
Scott C. Lundquist

SCOTT C. LUNDQUIST

Scott C. Lundquist is a Vice President at ETI, where he performs strategic and regulatory analysis, project management, and client support services for ETI's consulting projects in telecommunications regulation and economics. Since joining ETI in 1986, Mr. Lundquist has contributed to a broad range of telecommunications consulting projects, including work in the areas of costing and interconnection, implementation of competition policies, alternative regulation, network modernization and productivity, and rate design. Mr. Lundquist holds a B.A. from Harvard College in Psychology and Social Relations.

Mr. Lundquist has managed or participated in over seventy major projects concerning tariff and/or cost analysis, rate design, and regulatory policy development. His work has included direct consulting support to regulatory commissions in the U.S., Canada, China, and the Philippines, as well as service to telecommunications users groups and competitive suppliers. Mr. Lundquist has testified as an expert witness on telecommunications matters in Alabama, California, Connecticut, Hawaii, Maryland, Nevada, New Jersey, Ohio, Texas, Washington state, and Wisconsin. He has also assisted in the development of expert testimony submitted in over forty contested regulatory proceedings in a dozen states and Canada.

Mr. Lundquist spent nine weeks in Beijing in 1994 working in close association with officials of the China Ministry of Posts and Telecommunications on a technical assistance project sponsored by the Asian Development Bank. Mr. Lundquist developed and conducted several seminars for senior MPT officials on interconnection, tariffing and rate design for non-basic services, and regulatory restructuring issues. Mr. Lundquist was also the Project Manager for ETI's 1993-1994 engagement by the National Telecommunications Commission of the Philippines. In the course of this assignment, Mr. Lundquist spent six months on-site in Manila conducting several institutional strengthening activities, including assistance in implementing new competition and interconnection policies and staff training in regulatory methods.

Mr. Lundquist's recent work has focused on the implementation of local service competition policies and interconnection arrangements between incumbent local exchange carriers (ILECs) and new market entrants. In these assignments, Mr. Lundquist has offered expert testimony on behalf of consumer advocates and new entrants concerning ILEC cost studies for unbundled network elements (UNEs) in California, Hawaii, Ohio, Nevada, and New Jersey (1997-2001); testified on behalf of new entrants in California arbitration proceedings concerning interconnection costs and pricing (1996, 1999); and analyzed ILECs' proposed local number portability (LNP) costs and prices in the FCC's LNP investigation (1999).

Mr. Lundquist has also continued to participate in cases involving other important regulatory issues, including ILEC merger proposals, rate design, alternative regulation plans, and ILEC applications for inter-LATA services authority under Section 271 of the federal Telecommunications Act. Mr. Lundquist directed ETI's research effort to support the American Association for Retired Person (AARP) study of the impacts of the SBC/Pacific Telesis and Bell Atlantic/NYNEX mergers (1999), and also contributed research and writing to ETI testimony and affidavits addressing the proposed Bell Atlantic/GTE merger (1999). In 1998, Mr. Lundquist testified of behalf of the Texas Office of Public Utility Counsel in

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Southwestern Bell's rate group reclassification case (1998), and co-managed ETI's consulting support to the Colorado Office of Consumer Counsel in US West's alternative regulation case (1998). In 1999, Mr. Lundquist provided consulting support to the staff of the Washington Utilities and Transportation Commission in a case involving US West's yellow pages operations and assisted the Arizona Residential Utility Consumer Office in their review of US West's application concerning Section 271 authority in Arizona. Most recently, Mr. Lundquist co-authored a comprehensive report on alternative regulation for US West that was sponsored by the Utah Division of Public Utilities, and testified in Alabama concerning BellSouth's proposed rates and costs for Operations Support Systems (OSS) interfaces.

Mr. Lundquist has formerly served as Senior Consultant, Consultant, Senior Analyst, and Analyst at ETI. Prior to joining ETI, Mr. Lundquist performed computational and analytic work for research efforts in both the Division of Applied Science and Psychology Department at Harvard University.

Major reports and papers on telecommunications authored by Mr. Lundquist include:

"Efficient Inter-Carrier Compensation Mechanisms for the Emerging Competitive Environment" (with Lee L. Selwyn), August 2001.

"Price Cap Plan for USWC: Establishing Appropriate Price and Service Quality Incentives in Utah" (with Patricia D. Kravtin and Susan M. Baldwin). Prepared for the Utah Division of Public Utilities, March 2000.

"Bringing Broadband to Rural America: Investment and Innovation in the Wake of the Telecom Act" (with Lee L. Selwyn and Scott A. Coleman). Prepared for AT&T, September 1999.

"Promises and Realities: An Examination of the Post-Merger Performance of the SBC/Pacific Telesis and Bell Atlantic/NYNEX Companies" (with Scott A. Coleman). Prepared for the AARP Public Policy Institute, July 1999.

"Report on the RRD Investigation of Foreign Currency Adjustment Mechanisms". Prepared for the Philippines National Telecommunications Commission, August 1994.

"Manual of Procedures for the Rates Regulation Division" (with Paul S. Keller). Prepared for the Philippines National Telecommunications Commission, August 1994.

"Access Charges Implementation Strategy and Action Plan" (with the NTC Access Charges Research Group). Prepared for the Philippines National Telecommunications Commission, July 1994.

"RRD Operations Review" (with Daniel Espitia G.). Prepared for the Philippines National Telecommunications Commission, July 1994.

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“Review of Annual Reporting Requirements for Telecommunications Common Carriers.” Prepared for the Philippines National Telecommunications Commission, October 1993.

“The Infrastructure Dilemma: Matching Market Realities and Policy Goals” (with W.P. Montgomery). Prepared for the International Communications Association, January 1993.

“A Roadmap to the Information Age: Defining a Rational Telecommunications Plan for Connecticut” (with Susan M. Baldwin et al). Prepared for the Connecticut Office of Consumer Counsel, October 1992.

“New Connections for the 1990s: Managing the Changing Relationship Between Corporate Telecommunications Needs and the Local Telephone Company” (with W. Page Montgomery). Prepared for the International Communications Association, April 1990.

“Adapting Telecom Regulation to Industry Change” (with Dr. Lee L. Selwyn). Prepared for the International Communications Association and published in *IEEE Communications Magazine*, January 1989.

“A Study of Rate of Return Regulation and Alternatives - An Examination of Applicability to regulation of Telephone Companies by the Canadian Radio-Television and Telecommunications Commission” (with W. Page Montgomery and Lee L. Selwyn). Prepared for the Canadian Radio-Television and Telecommunications Commission, March 1989.

“Telecommunications Competition in Michigan and Regulatory Alternatives: Market Structure and Competition in the Michigan Telecommunications Industry” (with Lee L. Selwyn, David N. Townsend, Patricia D. Kravtin). Prepared for the Michigan Divestiture Research Fund Board, April 1988.

In the Matter of Performance Measurements and Standards for Unbundled Network Elements and Interconnection	CC Docket No. 01-318
In the Matter of Performance Measurements and Reporting Requirements For Operations Support Systems, Interconnection, and Operator Services and Directory Assistance	CC Docket No. 98-56
In the Matter of Deployment of Wireless Services Offering Advanced Telecommunications Capability	CC Docket No. 98-147
In the Matter of Petition of Association for Local Telecommunications Services for Declaratory Ruling	CC Docket No. 98-147, 98-141

COMMONWEALTH OF MASSACHUSETTS)
)
COUNTY OF SUFFOLK) ss.

Lee L. Selwyn, of lawful age, certifies as follows:

1. I am President of Economics and Technology, Inc. (ETI), Two Center Plaza, Suite 400, Boston, Massachusetts 02108. I am authorized to verify the statements contained in the foregoing Declaration of Lee L. Selwyn and Scott C. Lundquist in the above-captioned matter, prepared on behalf of Focal Communications Corporation, Pac-West Telecomm, Inc., and US LEC Corporation.


2. I certify that the foregoing statements made by me are true and correct to the best of my knowledge, information and belief. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.


Lee L. Selwyn

SCOTT C. LUNDQUIST, of lawful age, certifies as follows:

1. I am Vice President of Economics and Technology, Inc. (ETI), Two Center Plaza, Suite 400, Boston, Massachusetts 02108. I am authorized to verify the statements contained in the foregoing Declaration of Lee L. Selwyn and Scott C. Lundquist in the above-captioned matter, prepared on behalf of Focal Communications Corporation, Pac-West Telecomm, Inc., and US LEC Corporation.

2. I certify that the foregoing statements made by me are true and correct to the best of my knowledge, information and belief. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.


Scott C. Lundquist

Subscribed and sworn to before me this 21st day of January, 2002.


Notary Public

My commission expires 3/31/06.

